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The Bornean Tiger; Speculation on its Existence

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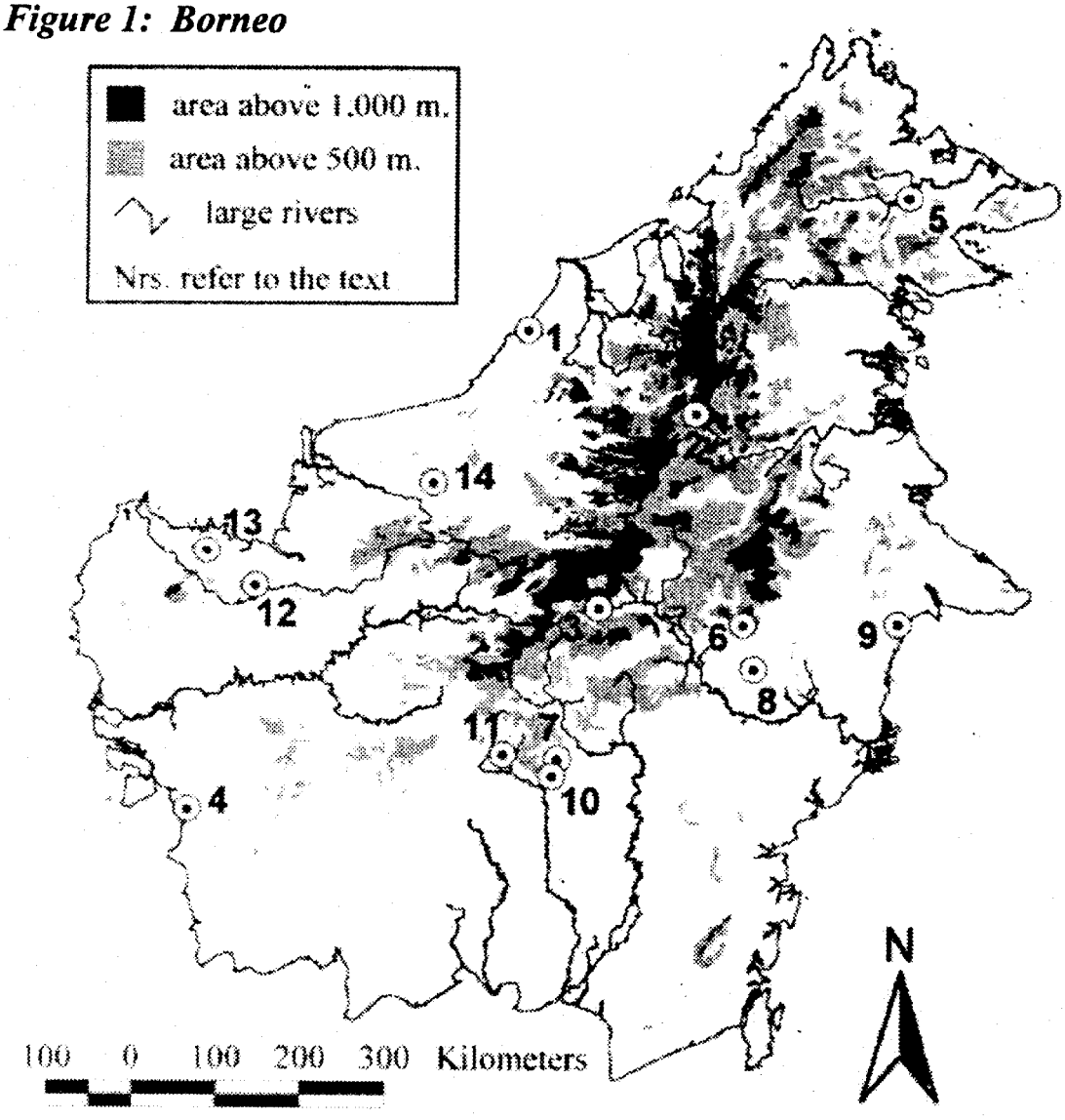
This short note presents and discusses references to the occurrence of the tiger *Panthera tigris* (Linn.) on the island of Borneo.

The numbers in the text refer to Figure 1.

Figure 1: Borneo



There is no scientific evidence to support the theory that tigers occur naturally on Borneo (Medway 1977). However, tiger skins (Hose and McDougall 1912, Sellato 1995), skulls (Nieuwenhuis 1904, Banks 1931), and canine teeth (Peranio 1960, Puri 1992 pers. obs.) have been observed in the possession of indigenous communities of the Sarawak interior and in West and East Kalimantan. Medway (1977) believed that these items had been imported.

Hooijer (1963) states that the recovery of the tip of an unerupted upper tiger canine from a superficial level in the excavation at the Niah cave in Sarawak (no. 1) suggests that the tiger may have been, until comparatively recently, a member of the native fauna. Unfortunately, Hooijer does not go into detail of how he identified this find. Remains from deeper levels in the cave had not been found in 1977 to corroborate the case (Medway 1977), and I am not aware of any finds since then.

One skull apparently existed in the Natural History Museum in London earlier this century and was labelled as "Borneo" (see Note). However, this skull may have been mislabelled. Furthermore, there is documentary evidence of tiger parts being introduced to Borneo by man. Nieuwenhuis, a Dutch anthropologist, brought tiger skulls and teeth from Java to Borneo as presents for tribal leaders of the upper Mahakam and Kapuas rivers in East and West Kalimantan respectively (Nieuwenhuis 1904).

Several authors mention evidence that the peoples of Borneo are at least very well aware of the tiger. In his study area in interior East Kalimantan (no. 2), Puri (1992) noted that tiger parts play an important role for the Penan and Kenyah people. Tiger teeth were used by community leaders for lie detecting and were considered to be very powerful. Only after 10 months did Puri get to see a set of six of them. Nieuwenhuis (1904) pointed out the great importance of tigers in traditional Bornean arts and religion; so much was the tiger worshipped and/or feared that it would generally be referred to only by a lesser name, '*aso*' or 'dog'.

Sellato (1995) in his zoo-linguistical study reports that most Dayak languages have a specific term to refer to the tiger that is quite distinct from other cats, such as the clouded leopard (*Neofelis nebulosa*). Also the Aoheng, a Bornean tribe of the upper Sungai Mahakam (Sungai = River, hereafter abbreviated as 'S') (no. 3), are aware of a number of details pertaining to the tiger's habitat and habits. This suggests that the tiger may have occurred on Borneo in the past, or that the people who populated Borneo came from a region of South East Asia where tigers existed (Sellato 1983, 1995).

Abbott (in Lyon 1911), a respected zoologist, actually believed that tigers existed in his study area in west Borneo (no. 4). Based on local narratives he thought that a much larger cat than the clouded leopard occurred. He thought it to be very rare, as few whom he met had ever seen it. Also Witkamp (1932) refers to tigers, which were claimed to occur in the 'Tjina-batangan' area (no. 5) in northern Borneo in the *Natuurkundig Tijdschrift voor Nederlands Indië* of 1857. Finally, Gersi (1975) produced evidence of tigers on Borneo. He claimed not only to have seen a tiger near the S. Belayan (no. 6) in East Kalimantan, but he also took photographs of the animal. The two photos in his book clearly depict

tigers. His explanation for this sighting was that in the past the sultans of Sarawak, Sabah, or Brunei must have imported these tigers from elsewhere. This explanation was considered scarcely plausible by Medway (1977), who thought that this report (if authentic) could only be evidence of a surviving indigenous publication. In his book, Gersi (1975) further states that the nomadic Punan people of Borneo knew of a large, striped cat species that, unlike the clouded leopard, did not climb trees.

During four years of fieldwork in many locations on Borneo I have come across a considerable number of alleged tiger sightings. The most recent tiger report came from the area between S. Pari and S. Hanyu in Central Kalimantan (no. 7), where a tiger was said to have been heard in 1995, although no one managed to see it. The interviewees asserted that they knew the roaring of the tiger well enough to discern it from other animals. One Punan hunter told me he had had a clear tiger sighting on a logging road near the S. Belayan in East Kalimantan (no. 8) in the early 1990s. Another informant said he had seen a captive young tiger in a logging concession, near Bengalon in East Kalimantan (no. 9). This animal was described as being different from both the Sumatran tiger and the clouded leopard, by being largely brown-coloured with only faint stripes.

In the Central Kalimantan village of Tangiran (no. 10), old people told of a large striped cat different from the clouded leopard. One tooth was shown; it was said to be between one and two centuries old and once belonged to a tiger that lived in the vicinity of the village. Finally, one sighting was reported from the PT Domas Raya logging concession and dated back to 1987/88 (no. 11). Again it was said that the animal was faintly striped, and the size of a Sumatran tiger.

Apart from the above useful records, the interviewee in the PT Domas Raya logging concession told a more fanciful story. He stated that the local tiger lived in a cave and would only come out in the seventh month of the year. It was thought to be associated with hermits and ascetics who could take on the shape of this animal. The animal was said to only occur in the mountains and not in lowlands like the Sumatran tiger. A.H. Everett recorded similar traditions in which tigers were associated with caves (Banks 1931). These stories were centred on the Pupok Hill (no. 12), Serambo (no. 13), and Bukit Rimong (no. 14), and mostly concerned a flying variety of the tiger that made weird noises in caves at certain seasons of the year (Banks,1931).

Discussion

It is impossible to judge the significance of the reported tiger sightings. Mjöberg (1930) already wondered about the apparent absence of tigers on Borneo, and it is indeed a mystery why the tiger appears absent from the island. The species occurs in a variety of habitats and seems to be very adaptable to different ecological conditions. On Borneo, prey species, such as sambar *Cervus unicolor*, bearded pigs *Sus barbatus*, or muntjaks *Muntiacus* spp. are common (pers. obs.), and, at present, there does not seem to be an ecological factor on Borneo preventing the tiger’s survival.

I hereby postulate four theories that could provide explanations for the tiger's absence from, or the presence on, Borneo:

1. Tigers never occurred on Borneo

The island of Borneo has been connected to Sumatra and Java several times during the Pleistocene when lower sea levels exposed the Sunda shelf. It is generally assumed that during the glacials most faunal exchanges between the islands occurred (e.g. Groves 1990). Tigers swim well and could certainly have crossed the rivers that dissected the exposed Sunda shelf. However, the drier climate during the glacials probably created open woodland savannah conditions on the shelf (for a discussion on this subject refer to Adams and Faure, 1997). It is therefore possible that the tiger, with a need for dense vegetation cover, and access to water (Sunquist and Sunquist 1989), found the exposed Sunda shelf too much of a barrier. Brongersma (1935) proposed an alternative explanation. He suggested that the tiger reached the archipelago at a time when Sumatra and Java were still connected, but already separated from Borneo (in the late Pleistocene).

2. Tigers once occurred naturally on Borneo but became extinct

Because of ecological conditions during the glacials, few tigers could reach Borneo. Furthermore, the carrying capacity of forest on Borneo's weathered substrate (MacKinnon *et al.* 1996) is generally less than on the rich volcanic soils of Java and Sumatra. Animal densities are therefore lower in Borneo, potentially supporting lower tiger densities (e.g. Rijksen and Meijaard 1999). It could thus be relatively easier to hunt a species to extinction in Borneo than in other areas, especially if most of the indigenous population hunted wildlife. Also, the great cultural importance of tigers in Borneo could suggest that the species would once have been heavily pursued by human hunters.

3. Tigers still occur naturally on Borneo

A very small possibility, but one that cannot be entirely ruled out. As opposed to the theory above, one could reason that a tiger population that occurs naturally at low densities, as it did in Borneo, might be better able to cope with dispersed individuals than a naturally high-density population at artificially low densities. Also hunting pressure on very dispersed animals may be low because the effort required to find a tiger would outweigh the potential profit. Therefore, a very low-density population in Borneo may have had a better chance to survive than elsewhere.

4. Tigers were once introduced to Borneo and established a wild-living population, which either survived or died out

As far as I am aware there is no historic documentation of tigers being introduced to Borneo, and I appeal to readers for any information on this.

Conclusion

Proving that a species is present is relatively straightforward, but finding proof that it has become extinct or locally absent is very difficult. At least a few times per year Indonesian newspapers still report on new observations of the now thought to be extinct Javan tiger (*P. t. sondaica*) in one of the most densely populated areas of the world. Luckily for the tiger there is no known historical presence on Borneo. I say 'luckily', because, ironically, if we assume that there is a remote chance of tigers surviving on Borneo, it may be the least threatened population of all, as few would be specifically pursuing them for their prized parts.

The question of what to do with the above tiger reports remains. If the scientific world is interested in finding out more, systematic interviews with indigenous hunters combined with camera trapping may be the best way to test whether tigers still occur. Camera trapping would be very useful because it would not only target tigers but also come up with information on a whole range of other little known Bornean species. Clearly positive results from camera trapping would still not tell whether tigers occur naturally or were introduced. Because two reports of tigers refer to a brown, faintly striped animal, it would be useful to ask informants how the Bornean tiger compares to the Sumatran tiger. Finally, an alternative approach, of course, would be to leave the image of the Bornean tiger intact in the mists of mythology.

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Note: Several authors have referred to a "Bornean" tiger skull at the Natural History Museum (NHM) in London. Gray (1862, 1867, 1874 in Brongersma 1935) probably first mentioned the Bornean skull. Pocock (1929) reports on the record of an old skull, labelled "Borneo", in the British Museum. Medway (1977: p. 146) mentions a tiger skull registered at the BMNH in 1859 as 'Purchased', with the locality "Borneo". Medway quotes the documentation as saying: "...This skull, attributed to Wallace on the label, is one of a small group of accessions simultaneously registered at the BMNH in 1859 as 'Purchased', with the locality "Borneo". Among other items in the group are a skull of Rhinoceros sondaicus (q.v. above), two skulls and some teeth of Babirussa and the skull of a tiger. There have been no subsequent authenticated records of any of the mammals, nor of Sus verrucosus, in Borneo, and the locality is evidently erroneous". A. Kitchener (in litt. 6 May 1999) referring to Medway (1964) mentions a Bornean tiger skull from the Warwick collection, while C. Smeenk (Curator Mammal Collection Leiden Museum, in litt. 8 June 1995), referring to Gray's catalogue of 1862, stated that the skull was in the Wright collection at the NHM. Interestingly, D. Hills of the NHM's mammal section, reports that there are no tiger skulls from Borneo and to her best knowledge none marked "Borneo" in the collection (D. Hills, in litt. 6 May 1999). This example shows the difficulty of delving into the history of such matters.